

Committee of the Whole (2) Report

DATE: Tuesday, January 21, 2020

WARD(S): ALL

TITLE: INTERNAL AUDIT REPORT – CONSTRUCTION AUDIT OF FIRE STATION 7-4: PHASE 2

FROM:

Kevin Shapiro, Director of Internal Audit

ACTION: FOR INFORMATION

Purpose

To communicate the findings from the Internal Audit Report on the Construction Audit of Fire Station 7-4: Phase 2.

Report Highlights

- The construction phase of Fire Station 7-4 has experienced numerous issues that have contributed to this project not being delivered on time.
- Improvements are recommended to ensure risks related to the execution of the City's construction activities are efficiently and effectively mitigated.
- Management has developed action plans which will mitigate the identified risks and address the recommendations outlined in the report.

Recommendations

1. That the Internal Audit Report on the Construction Audit of Fire Station 7-4: Phase 2 be received.

Background

The objective of the audit was to evaluate the effectiveness of construction management policies and procedures related to the fiscal, operational, and administrative controls over construction activities, including project scope, cost, schedule and quality.

Based on consultations with management, the construction of Fire Station #7-4 was selected for the audit. The single-story, LEED certified fire station is in Kleinburg and will include apparatus bays, ancillary offices and provide living quarters for the fire crew on shift. Construction of the fire station started in the spring of 2018, with a substantial performance date outlined in the contract of May 24, 2019.

Auditing a construction project from beginning to end can provide added assurance, identify problems as they arise, and help improve outcomes. Since the scope of the audit will encompass the complete lifecycle of the project, audit reports will be issued after the completion of the following project phases:

- Planning and Design, Bid and Procurement Phases (Phase 1). The Phase 1 report was presented at FA&A on June 6, 2018 and approved by Council on June 19, 2018.
- Construction Phase (Phase 2).
- Close Out Phase (Phase 3).

Phase 2 included a review of:

- Planning and Scheduling Management Process.
- Cost Management Process.
- Change Management Process.
- Liability and Insurance Provisions.

Previous Reports/Authority

[Internal Audit Report - Construction Audit of Fire Station 7-4: Phase 1](#)

Analysis and Options

Capital projects are generally funded, planned and executed as individual, discrete projects. Four objectives which are common to every construction project are: scope, cost, schedule and quality. The primary focus of project management is to plan and execute a project in such a manner as to maximize the ability to meet those four primary project objectives.

The project team's and specifically the project manager's focus now shifts from planning the project efforts to participating in, observing, and analysing the work being done. Infrastructure Development's project managers are responsible for keeping the project moving according to plan. The goal is to manage the project so that it finishes on schedule and within budget, while still meeting building codes, plans, and specs.

Some of the reasons why construction projects do not meet their objectives is that they are often saddled with poor communication protocols and inadequate controls around scope change management. Project management plans, even for relatively small

construction projects, should exhibit a level of detail greater than might be deemed appropriate for other types of projects of equivalent cost and duration.

In the construction phase of a project, the project plan is put into motion and the work of the project is performed on site. Progress is continuously monitored, and appropriate adjustments are made and recorded as variances from the original plan.

Financial Impact

There are no direct economic impacts associated with this report

Broader Regional Impacts/Considerations

Not applicable.

Conclusion

The construction phase of Fire Station 7-4 experienced numerous issues that have contributed to this project not being delivered on time. Improvements will be required to ensure risks related to the execution of the City's construction activities are efficiently and effectively mitigated.

The construction of Fire Station 7-4 was awarded to one of the largest construction companies in Ontario. However, in the fall of 2018 it was widely reported that the general contractor was facing financial difficulties. In April 2019, the Ontario Superior Court granted the general contractor its application for protection from its creditors, and the surety¹ provided funds to allow the general contractor to complete existing projects. This resulted in significant delays in the construction of Fire Station 7-4, as work on the project halted until subcontractor liens were cleared.

Throughout the construction phase, Infrastructure Delivery did an admirable job in ensuring that the project progressed by keeping the lines of communications open with the contractor, validating that liens were being cleared and working with the consultant, contractor and surety to develop recovery plans. Under these circumstances, the City had the option of replacing the general contractor. However, this would have been extremely risky since construction was already well underway and may have led to even more delays. By opting to work with all parties involved, the project was able to overcome these difficulties and be completed with the existing general contractor.

Additionally, the construction phase was completed with a relatively small number of change orders. Change orders are frequently encountered in any construction project. The American Society for Engineering² estimates that increases in the contract value from 5 to 10% are expected in most construction projects. The construction change orders

¹ The surety provides the financial guarantee that the contractor will fulfill their obligations outlined in a contract agreement.

² American Society for Engineering Education: AC 2007-3039: CHANGE ORDERS IMPACT ON PROJECT COST; Engy Serag, San Diego State University, Amr Oloufa, University of Central Florida.

represented only 2.6% of the construction cost of the Fire Station 7-4. The largest change was ensuring that the Fire Station was fitted with the recently developed security hardware standard. Accommodating this change during the construction phase of the project prevented the need for a more costly retrofit at a future date.

Although contractor issues created tremendous operational challenges for the project, it has also highlighted improvement opportunities to help mitigate future project related risks by ensuring that:

- A liquidated damages provision is included in all major construction contracts.
- Construction schedules and recovery schedules are realistic, complete and timely.
- Contractors provide acceptable expertise and resources.
- A formal project file quality review program is implemented.

For more information, please contact: Kevin Shapiro, Director of Internal Audit, ext. 8293

Attachments

1. Internal Audit Report – Construction Audit of Fire Station 7-4: Phase 2

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